

HP StorageWorks

Enterprise File Services Remote Copy Utility 2.1.6 reference manual



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Enterprise File Services Remote Copy Utility 2.1.6 reference manual

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Introduction

In This Introduction

Welcome to the *HP StorageWorks Enterprise File Services Remote Copy Utility Reference Manual*. Read this introduction for an overview of the information provided in this guide and for an understanding of the documentation conventions used throughout. This introduction contains the following sections:

- ◆ [“About This Guide,”](#) next
- ◆ [“Hardware and Software Dependencies”](#) on page 5
- ◆ [“Additional Resources”](#) on page 5
- ◆ [“Contacting HP”](#) on page 7

About This Guide

The *HP StorageWorks Enterprise File Services Remote Copy Utility Reference Manual* is a guide to the installation and use of the HP EFS Remote Copy Utility (HP EFS RCU). The HP EFS RCU efficiently transfers files and directories over an optimized link using Scalable Data Referencing (SDR), across the Wide Area Network (WAN). The HP EFS RCU can also assist and enhance backup and data replication products moving data across the WAN.

Types of Users

This guide is written for storage and network administrators who are familiar with administering and managing WAN networks, and backing up and replicating data over the WAN.

Organization of This Guide

The *HP StorageWorks Enterprise File Services Remote Copy Utility Reference Manual* includes the following chapters:

- ◆ [Chapter 1, “The HP EFS Remote Copy Utility,”](#) provides an overview of the HP EFS RCU and its features.
- ◆ [Chapter 2, “Installing and Using the RCU,”](#) describes how to install and run HP EFS RCU commands.
- ◆ [Chapter 3, “The HP EFS RCU Commands,”](#) provides a reference for the HP EFS RCU Command-Line Interface (CLI).

A comprehensive index directs you to areas of particular interest.

Document Conventions

This manual uses the following standard set of typographical conventions to introduce new terms, illustrate screen displays, describe command syntax, and so forth.

Convention	Meaning
<i>italics</i>	Within text, new terms and emphasized words appear in italics.
boldface	Within text, commands, keywords, identifiers (names of classes, objects, constants, events, functions, program variables), environment variables, filenames, Graphical User Interface (GUI) controls, and other similar terms appear in boldface.
Courier	Information displayed on your terminal screen and information that you are instructed to enter appear in Courier typeface.
KEYSTROKE	Keys that you are to press appear in uppercase letters in Helvetica font.
< >	Within syntax descriptions, values that you specify appear in angle brackets. For example: interface <ipaddress>
[]	Within syntax descriptions, optional keywords or variables appear in brackets. For example: ntp peer <addr> [version <number>]
{ }	Within syntax descriptions, required keywords or variables appear in braces. For example: {delete <filename> upload <filename>}
	Within syntax descriptions, the pipe symbol represents a choice to select one keyword or variable to the left or right of the symbol. (The keyword or variable can be either optional or required.) For example: {delete <filename> upload <filename>}

Hardware and Software Dependencies

The following table summarizes the hardware, software, and operating system requirements for the HP EFS RCU.

HP System Component	Hardware Requirements	Software Requirements Operating System Requirements
HP EFS Remote Copy Utility	<ul style="list-style-type: none"> Windows machines, UNIX servers running a Common Internet Filing System (CIFS) server, and Network Attached Storage (NAS) filers to be data sources and targets, when you specify a Universal Naming Convention (UNC) or mapped drive path. 	<ul style="list-style-type: none"> Any client or server machine running Windows 2000 or later operating system.

NOTE: The HP EFS RCU depends on certain Common Internet File System (CIFS) Application Programming Interfaces (APIs). While these APIs are supported on all Microsoft Windows platforms, they might not be supported on all NAS solutions, such as Samba. (You can use the HP EFS RCU to back up Samba shares if the data center is a Windows machine.)

Additional Resources

This section describes the following resources that supplement the information in this guide:

- ◆ Related HP documentation
- ◆ Online Documentation
- ◆ Related technical reference books

Related HP Documentation

You can access the complete document set for the HP EFS WAN Accelerator from the *HP StorageWorks EFS WAN Accelerator Documentation Set CD-ROM*, or on the HP documentation support site located at <http://www.hp.com/support/manuals>:

- ◆ *HP StorageWorks Enterprise File Services WAN Accelerator Installation and Configuration Guide* describes how to install and configure the HP EFS WAN Accelerator.
- ◆ *HP StorageWorks Enterprise File Services WAN Accelerator Command-Line Interface Reference Manual* is a reference manual for the command-line interface for the HP EFS WAN Accelerator. It lists commands, syntax, parameters, and example usage.
- ◆ *HP EFS WAN Accelerator Management Console User Guide* describes how to use the HP EFS WAN Accelerator Management Console to administer and monitor your HP system.

- ◆ *HP StorageWorks Enterprise File Services WAN Accelerator Manager User Guide* describes how to install, configure, and administer a network made up of multiple HP EFS WAN Accelerators using the HP StorageWorks Enterprise File Services WAN Accelerator Manager.
- ◆ *HP StorageWorks Enterprise Files Services WAN Accelerator Deployment Guide* describes how to deploy the HP EFS WAN Accelerator in complex network environments (for example, environments using Web Cache Communication Protocol (WCCP), Policy Based Routing (PBR), and Layer-4 switches).
- ◆ *HP StorageWorks Enterprise File Services N4c WAN Accelerator 4-port NIC Installation Guide* describes how to install bypass cards in the HP EFS WAN Accelerator.

Online Documentation

The HP EFS WAN Accelerator documentation set is periodically updated with new information. To access the most current version of the HP EFS WAN Accelerator documentation and other technical information, consult the HP support site located at <http://www.hp.com/support/manuals>.

Related Reading

To learn more about network administration, consult the following books:

- ◆ *Microsoft Windows 2000 Server Administrator's Companion* by Charlie Russell and Sharon Crawford (Microsoft Press, 2000)
- ◆ *Common Internet File System (CIFS) Technical Reference* by Storage Networking Industry Association (Storage Networking Industry Association, 2002)
- ◆ *TCP/IP Illustrated, Volume I, The Protocols* by W. R. Stevens (Addison-Wesley, 1994)
- ◆ *Internet Routing Architectures (2nd Edition)* by Bassam Halabi (Cisco Press, 2000)

Technical Support

Contacting HP

This section describes how to contact HP.

Telephone numbers for worldwide technical support are listed on the following HP web site: <http://www.hp.com/support>. From this web site, select the country of origin. For example, the North American technical support number is 800-633-3600.

NOTE: For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- ◆ Technical support registration number (if applicable)
- ◆ Product serial numbers
- ◆ Product model names and numbers
- ◆ Applicable error messages
- ◆ Operating system type and revision level
- ◆ Detailed, specific questions

HP Storage Web Site

The HP web site has the latest information on this product, as well as the latest drivers. Access the storage site at: <http://www.hp.com/country/us/eng/prodserv/storage.html>. From this web site, select the appropriate product or solution.

HP NAS Services Web Site

The HP NAS Services site allows you to choose from convenient HP Care Pack Services packages or implement a custom support solution delivered by HP ProLiant Storage Server specialists and/or our certified service partners. For more information see us at: http://www.hp.com/hps/storage/ns_nas.html.

CHAPTER 1

The HP EFS Remote Copy Utility

In This Chapter

This chapter provides an overview of the HP EFS Remote Copy Utility (HP EFS RCU). It contains the following sections:

- ◆ “Overview,” next
- ◆ “Features” on page 10

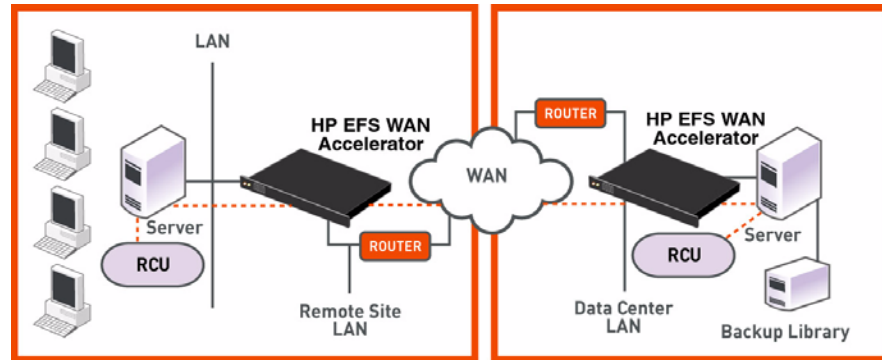
Overview

The HP EFS RCU is a command-line utility that runs on Windows 2000 or later operating systems. You install the HP EFS RCU on a Windows client and server that communicate over a Wide Area Network (WAN). The HP EFS RCU can be run through the Windows Services Control Panel or the Command-Line Interface (CLI). You run the HP EFS RCU commands using the CLI.

The HP EFS RCU is designed to transfer data over a WAN link by minimizing the number of round-trip handshakes and transferring only modified data blocks when it executes consecutive copies of a set of files and directories. The HP EFS RCU efficiently sends and copies data on high latency links when HP EFS WAN Accelerators are deployed on the link. The HP EFS RCU can significantly accelerate the performance of more comprehensive backup products by allowing the shrinkage of backup windows and enhanced backup architectures. When a file or directory is copied using the HP EFS RCU, Windows specific file features, such as security information (Access Control Lists), NT file system streams, and file attributes are also copied.

As shown in [Figure 1-1](#) the HP EFS RCU can be used to transparently prepopulate data from the server at the data center, to the HP EFS WAN Accelerator at the remote site. Thus, when clients at the remote site access data, they can observe LAN-like performance.

Figure 1-1. HP EFS RCU Deployment



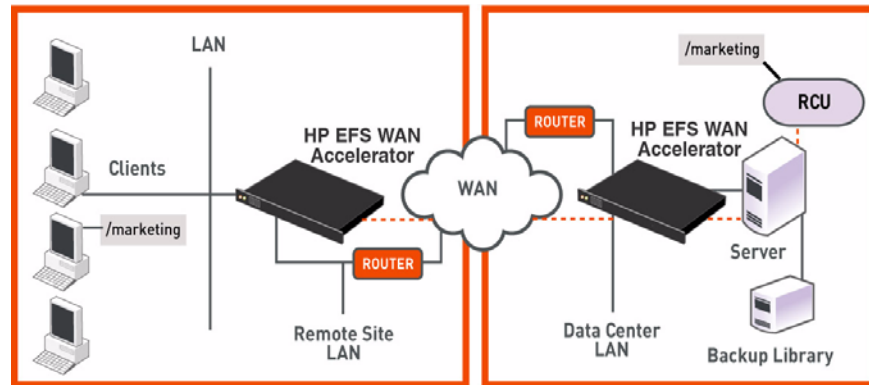
Features

With the HP EFS RCU running on the client and server, you can perform the following actions:

- ◆ **Data Transfer.** The **HP EFS RCU** efficiently transfers data from a client to a specified target directory on a server across the WAN. The **HP EFS RCU** eliminates extra round-trips caused by Common Internet File System (CIFS), reducing that amount of time it takes to transfer data across the WAN.
- ◆ **Mirroring.** The **HP EFS RCU** synchronizes a directory on the server with one on the client. Mirroring applies to files changed, added, and deleted on the client.
- ◆ **Monitoring.** The **HP EFS RCU** can actively monitor client directories and perform a variety of actions such as mirroring or copying data, when it detects a change in them.

- ◆ **Transparent Prepopulation.** With transparent prepopulation the HP EFS RCU *warms* the data store of deployed HP EFS WAN Accelerators with data from the client. When a data store is warm, the HP EFS WAN Accelerator has already seen the data. When data is sent again over the WAN only new or modified data is sent, dramatically increasing the rate of data transfer over the WAN.

Figure 1-2. Transparent Prepopulation



- ◆ **Static Backup.** With the HP EFS RCU, when a scheduled static backup window occurs, because the data is already prepopulated in the HP EFS WAN Accelerators (using the transparent prepopulation feature), only new and modified data is transported to the backup site. Static backup allows enterprise customers to reduce their backup windows.
- ◆ **Proxy File Service (PFS).** The HP EFS RCU can be run in concert with PFS, an optional feature on the HP EFS WAN Accelerator. PFS provides LAN access to files originating across the WAN and continuous access to files in the event of WAN disruption. PFS allows you to store local copies of files at the remote site in an integrated virtual file server resident on the HP EFS WAN Accelerator. For more information on PFS see, the *HP StorageWorks Enterprise Files Services WAN Accelerator Deployment Guide*.

CHAPTER 2

Installing and Using the RCU

In This Chapter

This chapter describes how to install the HP EFS Remote Copy Utility (RCU). It also describes how to copy, mirror, monitor and perform transparent prepopulation of data across the Wide Area Network (WAN). It contains the following sections:

- ◆ “Installing the RCU,” next
- ◆ “Upgrading from RCU 2.1 to 2.1.x” on page 14
- ◆ “Modifying the Default RCU Parameters” on page 14
- ◆ “Running the RCU from the Command-Line Interface” on page 15
- ◆ “Scheduling Tasks for the RCU” on page 15
- ◆ “Starting and Stopping the RCU in Server Mode as a Windows Service” on page 16
- ◆ “Copying Data” on page 17
- ◆ “Mirroring Data” on page 18
- ◆ “Transparently Prepopulating CIFS Data” on page 19
- ◆ “Monitoring Data” on page 20
- ◆ “Restricting Clients” on page 21
- ◆ “Creating Log Files” on page 21
- ◆ “Additional RCU Features” on page 21

Installing the RCU

You install the RCU on the client and server.

To install the RCU on a client and server

1. Download the RCU installer package from the HP support site located at <http://www.hp.com>.
2. Double-click the **RCU.msi** file to run the installer. Follow the on-screen instructions to complete the installation.

The installer places the binary in the **C:\Program Files\RCU** directory and creates a standard Windows service on your machine. The installer adds this directory to your path environment variable. Within this directory the installer places two sample configuration files, **r_client.cfg** and **r_server.cfg**. You can use these files to set the program parameters for the RCU (for example, **read timeout**).

For the CLI command to use these configuration files, please see [“/configfile” on page 32](#). A copy of the **readme** file is placed in this directory, please read this file for important information regarding the RCU configuration and an example of the configuration file. A log directory is also created for logging purposes.

NOTE: In the default state, immediately after installation, the service will not be running.

NOTE: To uninstall the RCU, use the Windows **Add/Remove Programs** tool in the Windows Control Panel.

Upgrading from RCU 2.1 to 2.1.x

Prior to the installing the new RCU software, if you have modified the **r_server.cfg** file which is located in **C:\Program Files\RCU** , perform the following procedures:

To save configuration changes prior to upgrade

1. Make a copy of **C:\Program Files\RCU** and put it in a separate directory, for example **c:\temp**.
2. After the installation, copy the **r_server.cfg** file back to **C:\Program Files\RCU** and overwrite the same file in the **C:\Program Files\RCU** directory.

Modifying the Default RCU Parameters

You can modify the parameters of the RCU service by editing the **r_server.cfg** file in the **C:\Program Files\RCU** directory.

To modify default parameters in the r_server.cfg file

1. Stop RCU service
2. Edit the **r_server.cfg** file. For example, to change **read timeout** value, append the line: **/readtimeout “nnn”** in the **r_server.cfg** file, where **“nnn”** is the least number of seconds to complete a manual sync operation. The suggested minimum setting to perform a manual sync operation is 10800 seconds (3 hours).
3. Save the **r_server.cfg** file.
4. Restart the RCU service.

Running the RCU from the Command-Line Interface

The following section describes how to run the RCU from the Command-Line Interface (CLI).

To run the RCU from the command-line interface

1. On the server, start a command window.
2. Move to the **working** directory on the server where you want to copy data. For example:

```
cd e:\working
```

3. Start the RCU on the server. For example:

```
rcu /server
```

This command starts the server RCU process in the **e:\working** directory.

4. Alternately, on the client, start a command window.
5. Move to the **working** directory on the client where you want to copy data. For example:

```
cd c:\data
```

6. Run the RCU on the client. For example:

```
rcu /copy c:\data server1 client1_data
```

This command starts the client RCU process and copies c:\data into e:\working\client1_data on the server.

Scheduling Tasks for the RCU

The RCU can be run on a client machine as a scheduled task using the Windows Task Scheduler. The task scheduler is available in Windows 2000 and more recent versions of the Windows operating system. The following procedures describe how to run the RCU and schedule a task running the Windows XP operating system.

In a typical setup, the client RCU is scheduled daily, and within a day, it can be scheduled multiple times. When scheduling tasks make sure you put in the proper command-line arguments for the client RCU.

IMPORTANT: Windows restricts many file names (including the path) to 255 characters.

IMPORTANT: The following procedures assume you have installed and started the RCU on your server.

To schedule tasks for the RCU on a client

1. Select **Start -> All Programs -> Accessories -> System Tools -> Scheduled Tasks** to display the Scheduled Tasks dialog box.
2. Double-Click **Add Scheduled Task** to display the Scheduled Task Wizard.

TIP: To modify an already scheduled task, double-click the task in the Scheduled Tasks dialog box.

3. In the Scheduled Task Wizard, select **Browse**.
4. Select **Local Disk (C:) -> Program Files -> RCU -> RCU.exe**.
5. Perform the steps in the Scheduled Task Wizard. Make sure you check **When my computer starts** rather than **When I log in**. This assures that in the event of a power failure or a reboot, the RCU client is started automatically when the client is restarted.
6. Click **Open advanced properties for this task when I click Finish** to open the Advanced Properties dialog box.
7. In the Advanced Properties dialog box, click the Settings tab and uncheck the **Stop the task if it runs for 72 hours** dialog box.
8. In the Advanced Properties dialog box, click the Task tab to display the RCU job.
9. In the **Run** text box, add the command arguments you want to run. For example:

```
rcu /copy c:\data server1 client1_data
```

TIP: To schedule multiple tasks, click the Schedule tab in the Advanced Properties dialog box and click **Show multiple schedules**.

10. Click **Apply**.
11. Click **OK** to save your settings.

Starting and Stopping the RCU in Server Mode as a Windows Service

In server mode, you have the option to run the RCU as a Windows Service using **Administrative Tools** in the Control Panel. The RCU must be run in server mode to perform the Proxy File Service (PFS) function.

The following procedures apply to Windows XP systems.

To start the RCU in server mode as a Windows service

1. Click **Start ->Control Panel ->Administrative Tools ->Services** to display the Services dialog box.
2. Double-click RCU in the local services list to display the RCU Service dialog box.
3. Click the **Log On** tab to enter the user name and password you want the service to use when you log in.

IMPORTANT: The user must have write access to the PFS shares it specifies in order for the RCU to write to them.

4. Click the General tab and select **Automatic** from the **Startup type** drop-down list to specify that you want the service to begin running automatically on system reboot.
5. Under Service Status, click **Start** to start the service.

For detailed information about managing Windows services, see the Windows Services online help

Copying Data

The RCU efficiently transfers data across the WAN from a client to a specified target directory on a server. First you must start the RCU on the server, then you can perform RCU actions such as copying, mirroring, or transparent prepopulation. Client actions must be run from the command window or as a scheduled job in the control panel. The following examples describe how to run the RCU from the command window.

To copy data

1. On server1, start a command window.
2. Move to the **working** directory on the server where you want to copy data. For example:

```
cd e:\working
```

3. Start the RCU on the server. For example:

```
rcu /server
```

This command starts the server RCU process in the **e:\working** directory.

4. On the client, start a command window.
5. Move to the **data** directory. For example:

```
cd c:\data
```

6. Copy the **data** directory to the server. For example:

```
rcu /copy c:\data server1 client1_data
```

In this example the RCU copies the **c:\data** directory on the client to the **client1_data** directory on the server (which is located in the RCU working directory on the server).

IMPORTANT: Windows restricts many file names (including the path) to 255 characters. When you copy, mirror, or prepopulate data using the RCU, make sure your path and file names do not exceed 255 characters. For example: `c:\temp\rcu\rcu.exe /copy d:\database remoteHost d:\NYBackup\database`
If a file in **d:\database** has a name with 243 characters, this file cannot be restored on the server because the server path name and the file name exceeds 255 characters. The RCU reports an error in this case.

Mirroring Data

When the RCU mirrors data, the client specifies to the server which directory or file it wants to mirror. The server sends information about this directory on the server to the client. The client examines the information on the server and compares it with its own files. Finally, the client sends the files that differ to update the server. Any files on the server that are different from the client will either be removed (if they do not exist on the client) or updated based on the client version. New files created on the client will also be sent to the server.

In monitor mode with mirroring, only the client is monitored for changes, not the server. A change on the server is not detected until a change occurs on the client directory where the mirroring process is invoked.

The client RCU utility uses the following information to compare the client and server files:

- ◆ File attributes (for example: read-only, hidden, system, and so forth)
- ◆ File creation or modification time
- ◆ File size
- ◆ Security descriptor (only if the **/compareacls** option is invoked)

On the client, for each file or directory, if any of the above have changed, the file on the server is updated to match the file on the client. Thus, mirroring makes the server the same as the client.

To mirror data

1. On server1, start a command window. This command starts the server RCU process in the **e:\working** directory.
2. Move to the **working** directory on the server where you want to copy data. For example:

```
cd e:\working
```

3. Start the RCU on the server. For example:

```
rcu /server
```

4. On the client, start a command window.

5. Move to the **build** directory. For example:

```
cd c:\build
```

6. Mirror the **build** directory to the server. For example:

```
rcu /mirror c:\build server1 build1
```

In this example, after the operation, the contents of the **build1** directory on the server (which is located in the RCU working directory) is synchronized with and reflects the **c:\build** directory on the client.

Transparently Prepopulating CIFS Data

In contrast to mirroring and copying, when the RCU client performs transparent prepopulation, it can send data to an HP EFS WAN Accelerator, not to an RCU server.

To perform prepopulation, you must enable Common Internet File System (CIFS) transparent prepopulation on the HP EFS WAN Accelerator. You can either use the CLI (that is, the **protocol cifs prepop enable** command) or the HP EFS WAN Accelerator Management Console (that is, the Setup: Optimization Service - Protocol: CIFS page).

The connection from the RCU client must flow through a client-side HP EFS WAN Accelerator to reach the server-side HP EFS WAN Accelerator. You accomplish this by running the RCU on a Windows machine that already has its network connections optimized by an HP EFS WAN Accelerator.

To prepopulate data on an HP EFS WAN Accelerator

1. On the client, start a command window.

2. Prepopulate the server-side HP EFS WAN Accelerator with data from the client. For example:

```
rcu /prepop c:\data WANAccelerator1
```

where 10.1.1.1 is the Primary IP for the server-side HP EFS WAN Accelerator.

IMPORTANT: To specify the HP EFS WAN Accelerator for data warming you must use the HP EFS WAN Accelerator's Primary IP address. If you do not use the Primary IP address, the HP EFS WAN Accelerator cannot effectively warm the data.

In this example, the RCU client sends the files or directory in **c:/data** to the target HP EFS WAN Accelerator.

Because data flows through both HP EFS WAN Accelerators, the data store on them is *warm* with the file data transmitted. A warm HP EFS WAN Accelerator has seen the data before, thus only data that has not been transferred before or has changed, is sent across the WAN.

CIFS transparent prepopulation assures high performance for future data transfers. You can also use it to transfer the data store before HP EFS WAN Accelerators are deployed in their final location.

IMPORTANT: To ensure efficient transparent prepopulation, only prepopulate the HP EFS WAN Accelerator with as much data as the disk can hold.

Monitoring Data

The RCU can monitor client directories (and their subdirectories) for changes. After a change has been detected the RCU performs a mirror, copy, or prepopulation action. The changes can be file updates, file or directory creation and deletion, attribute changes, security changes, and so forth.

To run the RCU in monitor mode

- Add the monitor mode arguments to the **Run** command-line. For example:

```
rcu /monitor /monitoridlewait 10 /monitormaxwait 300 /mirror  
c:\build server1 build1
```

In this example, the RCU waits for any changes in the **c:\build** directory, or any subtree of it. After a change is detected, the RCU waits for 10 seconds where no further changes occur, or 300 seconds after the initial change, whichever comes first. When the time limit is reached, the RCU mirrors the client **c:\build** directory tree and the **build1** directory on the server.

NOTE: The RCU cannot monitor an entire hard drive (for example: the **c:** drive). You can monitor source directories on network shares. For example, the **\\localserv\dir** directory.

For all client actions other than mirroring, consider making the idle and maximum wait-times long. Otherwise, you might frequently perform large data transfers. While the deployed HP EFS WAN Accelerators significantly reduce the bandwidth required, the data transfers place a load on the client, the HP EFS WAN Accelerators, and the server. For detailed information, see

["/monitoridlewait" on page 29](#) and ["/monitormaxwait" on page 29](#)

Restricting Clients

By default, the server only allows data in and under the working directory to be altered. You can create restrictions so that only clients from a specified list are allowed.

To restrict clients

1. Move to the **working** directory on the server. For example:

```
cd e:\working
```

2. At the command prompt, restrict clients. For example:

```
rcu /server /allowclientip 10.0.0.100 /allowclientip Portola
```

where **/allowclientip** specifies the IP address (in this example, 10.0.0.100) and **/allowclientip** specifies the client machine (Portola), that you want to allow access to.

Creating Log Files

The RCU can log actions to a file or set of files. You can use a rotating log, where it writes to a single log file until a size limit is reached. Upon reaching the size limit, it creates a new log file.

A maximum number of log files can also be specified so that the RCU rotates through a small set of files. This feature is more appropriate when the RCU is running in server or monitor mode.

To create a log file

For example:

```
rcu /monitor /mirror c:\build server1 build1 /logfilename  
build_watcher.log /logfilenum 10 /logfilemax 10
```

In this example, the client is monitoring the **c:\build** directory. It is logging information to a set of 10 files named **build_watcher.log.1** through **build_watcher.log.10**, with each file restricted to a maximum of 10 Megabytes. When the first log file reaches this maximum capacity then the next log file is used.

Additional RCU Features

The following section describes additional features of the RCU. It contains the following sections:

- ◆ [“Specifying Time Limits,” next](#)
- ◆ [“Specifying Wild Cards” on page 22](#)
- ◆ [“Excluding Files and Directories” on page 22](#)

Specifying Time Limits

The RCU client can be given a time limit for mirroring, copying, or transparently prepopulating data. A time limit can be useful when you want to limit data transfer usage to a certain time frame (for example, 2 hours after midnight) to control bandwidth usage.

The following example illustrates the transparent prepopulation of the **c:\data** directory until the entire directory has been transferred, or 1 hour (that is, 3600 seconds) has passed, whichever comes first. For example:

```
rcu /prepop c:\data WANAccelerator1 /timeout 3600
```

Specifying Wild Cards

Source locations can have a wild card (*) in the last part of the path (for example, **c:\dir\newfiles***). The wild card can be used with any of the client locations to limit the data sources. The following example mirrors any directory or file starting with **newfile** in the **c:\data** directory. The files appear as **build1\newfile1**, **build1\newfile2**, and so forth on the server. For example:

```
rcu /mirror c:\data\newfile* server1 build1
```

Excluding Files and Directories

Files or directories can also be individually excluded using the **/excludepath** option.

The following example copies the **c:\data** subtree to the **newdata** directory on the server (with the exception of anything in or below the **c:\data\private** directory):

```
rcu /copy c:\data server1 newdata /excludepath \private
```


CHAPTER 3

The HP EFS RCU Commands

In This Chapter

This chapter describes the HP EFS Remote Copy Utility (HP EFS RCU) Command-Line Interface (CLI) and its options. It contains the following sections:

- ◆ [“Client Actions,”](#) next
- ◆ [“Client Options”](#) on page 25
- ◆ [“Server Options”](#) on page 26
- ◆ [“Monitoring Actions”](#) on page 29
- ◆ [“Logging Options”](#) on page 30
- ◆ [“Global Options”](#) on page 31

Client Actions

The following section describes the CLI commands that govern the client machine. It contains the following CLI commands:

- ◆ [“/copy,”](#) next
- ◆ [“/mirror”](#) on page 24
- ◆ [“/prepop”](#) on page 24

/copy

Description	Copies client files to the server.
Syntax	<code>/copy <localdir/file> <server> <serverdir/file></code>

Parameters

<localdir/file>	Specifies the local directory where the files are located.
<server>	Specifies the server where you want to copy files.
<serverdir/file>	Specifies the server directory where you want to copy files.
NOTE: This can be a complete path or UNC path if the /allowabspath is enabled on the server. To enable the /allowabspath command see, “/allowabspath” on page 27 .	

Example

```
rcu /copy c:\data server1 client1_data
```

/mirror

Description Mirrors client and server directories.

Syntax /mirror <localdir/file> <server> <serverdir>

Parameters

<localdir/file>	Specifies the local directory where the files are located.
<server>	Specifies the server where you want to mirror files.
<serverdir/file>	Specifies the server directory where you want to mirror files.

Example

```
rcu /mirror c:\data server1 client1_data
```

/prepop

Description Transparently prepopulates the HP EFS WAN Accelerator data store with data.

Syntax /prepop <localdir/file> <HP EFS WAN Accelerator>

Parameters

<localdir/file>	Specifies the local directory where the files are located.
<HP EFS WAN Accelerator>	Specifies the IP address of the HP EFS WAN Accelerator where you want to prepopulate the data store. You must specify the HP EFS WAN Accelerator Primary IP address, not the in-path IP address.

Example

```
rcu /prepop c:\data wal
```

Client Options

The following CLI options are available for the client commands. It contains the following client CLI options:

- ◆ [“/excludepath,”](#) next
- ◆ [“/maxretries”](#) on page 25
- ◆ [“/maxretrywait”](#) on page 26
- ◆ [“/timeout”](#) on page 26

/excludepath

Description Excludes the specified path or pattern.

Syntax `/excludepath <path or pattern> [/excludepath <path or pattern>]`

Parameters

<path or pattern>	Specifies the path or pattern to exclude.
--------------------------------	---

Example

```
rcu /copy c:\data server1 newdata /excludepath c:\data\private
```

TIP: To exclude multiple paths, you can stack them in one command.

/maxretries

Description Specifies the maximum number of connection attempts. The default value is 3.

Syntax `/maxretries <number>`

Parameters

<number>	Specifies the maximum number of connection attempts.
-----------------------	--

/maxretrywait

Description Specifies the maximum amount of time (in seconds) between connection attempts. The default value is **30** seconds.

Syntax **/maxretrywait <seconds>**

Parameters

<seconds>	Specifies the maximum number seconds to wait before the next connection attempt.
------------------------	--

/timeout

Description Halt an operation after the time period specified. By default **/timeout** is not enabled.

Syntax **/timeout <seconds>**

Parameters

<seconds>	Specifies the number of seconds before the time limit occurs.
------------------------	---

Example `rcu /timeout 3600`

Server Options

The following section describes the CLI commands that govern the server machine. It contains the following CLI commands:

- ◆ ["/allowabspath," next](#)
- ◆ ["/allowclientip" on page 27](#)
- ◆ ["/denyclientip" on page 27](#)
- ◆ ["/server" on page 28](#)
- ◆ ["/serverdebug" on page 28](#)

/allowabspath

Allows the client to specify a destination drive as a complete path with drive letters or using the UNC path.

WARNING: Use the **/allowabspath** server option with caution; if you specify the drive as the destination and mirror an empty directory as the source, it will overwrite the data on your drive.

Syntax **/allowabspath**

Parameters None

Example

```
On the server:
rcu /server /allowsabspath
On the client:
rcu /copy data server C:\private\data
or
rcu /copy data server \\server2\data
```

/allowclientip

Description Allows connections from a given client.

Syntax **/allowclientip <client> [/allowclientip <client>]**

Parameters

<client>	Specifies the client machine name or IP address.
-----------------------	--

TIP: To allow multiple IPs, you can stack them in one command.

/denyclientip

Description Deny connections from a specified client machine.

Syntax **/denyclientip <client> [/denyclientip <client>]**

Parameters

<client>	Specifies the client machine.
-----------------------	-------------------------------

TIP: To deny multiple IPs, you can stack them in one command.

/server

Description Run the HP EFS RCU in server mode.

Syntax `/server`

Parameters None

Example `rcu /server`

/serverdebug

Description If running in server mode, stops the HP EFS RCU after the first client is processed.

Syntax `/serverdebug`

Parameters None

Example `rcu /serverdebug`

Monitoring Actions

The following section describes the monitoring CLI commands. It contains the following CLI commands:

- ◆ [“/monitor,”](#) next
- ◆ [“/monitoridlewait”](#) on page 29
- ◆ [“/monitormaxwait”](#) on page 29

/monitor

Description Waits for changes in the local directory, then performs the specified client actions.

Syntax `/monitor <client_actions>`

Parameters

<client_actions>	Specifies the monitoring actions you want to perform on the client machine.
-------------------------------	---

Example `rcu /monitor /monitoridlewait 10 /monitormaxwait 300 /mirror c:\build
server1 build1`

/monitoridlewait

Description Specifies the maximum idle time before carrying out the specified client action. The default value is **10** seconds.

Syntax `/monitoridlewait <seconds>`

Parameters

<seconds>	Specifies the maximum idle time before performing the specified client action. The default value is 10 .
------------------------	---

Example `rcu /monitor /monitoridlewait 10 /monitormaxwait 300 /mirror c:\build
server1 build1`

/monitormaxwait

Description Specifies the maximum time to wait, after a change on the client machine, before performing the client action. The default value is **300** seconds.

Syntax `/monitoridlewait <seconds>`

Parameters

<seconds>	Specifies the maximum time period to wait before performing the specified client action. The default value is 300 seconds.
------------------------	---

Example

```
rcu /monitor /monitoridlewait 10 /monitormaxwait 300 /mirror c:\build
server1 build1
```

Logging Options

The following section describes the logging CLI commands. It contains the following CLI commands:

- ◆ [“/logfile,” next](#)
- ◆ [“/logfilemax” on page 30](#)
- ◆ [“/logfilename” on page 31](#)
- ◆ [“/logfilenum” on page 31](#)
- ◆ [“/quiet” on page 31](#)
- ◆ [“/verbose” on page 31](#)

/logfile

Description	Writes logs to a file. The default file name is rcu.log.txt .
Syntax	/logfile
Parameters	None
Example	<code>rcu /server /logfile</code>

/logfilemax

Description	Specifies the maximum log file size in bytes. The default value is 8777 bytes.
Syntax	/logfilemax <num>
Parameters	

<num>	Specifies the maximum size of the log file in bytes.
--------------------	--

Example

```
rcu /server /logfile /logfilemax 15000
```


/logfilename

Description Specifies a name of a log file. The default file name is **rcu.log**.

Syntax **/logfilename** <name>

Parameters

<name>	Specifies the name of the log file.
--------	-------------------------------------

Example `rcu /server /logfilename mylog.txt`

/logfilenum

Description Specifies the maximum number of log files to keep. The default value is **10**.

Syntax **/logfilenum** <num>

Parameters

<num>	Specifies the number of log files to keep.
-------	--

Example `rcu /server /logfilenum 20`

/quiet

Description Activates quiet logging mode (that is, no output to the console).

Syntax **/quiet**

Parameters None

/verbose

Description Activates verbose logging mode. The **/verbose** command can slow performance of the HP EFS RCU.

Syntax **/verbose**

Parameters None

Global Options

The following section describes the global CLI options available with the HP EFS RCU. It contains the following CLI options:

- ◆ [“/compareacls,” next](#)
- ◆ [“/configfile” on page 32](#)
- ◆ [“/port” on page 33](#)
- ◆ [“/readtimeout” on page 33](#)
- ◆ [“/recvbuf” on page 33](#)
- ◆ [“/sendbuf” on page 33](#)

/compareacls

Description For two files that are the same except for their security descriptors, the HP EFS RCU recognizes them as different and mirrors them from the client to the server. If the **/compareacls** option is not specified, the HP EFS RCU recognizes the files as the same and does not mirror them.

TIP: You can also use the **/compareacls** option in the monitor and mirror modes.

By default, for broadcast shares in PFS deployments, Access Control Lists (ACLs) are not compared. If only the ACL has changed on the server, this is not reflected on the proxy file server (that is, the HP EFS WAN Accelerator). If you need to update the ACLs for a broadcast mode share, the HP EFS RCU must be temporarily started with the **/compareacls** option.

For detailed information about the Proxy File Service, see the *HP StorageWorks Enterprise Files Services WAN Accelerator Deployment Guide* and the *HP EFS WAN Accelerator Management Console User Guide*.

Syntax **/compareacls**

Parameters None.

Example `rcu /mirror c:\data server1 newdata /compareacls`

/configfile

Description Enables the HP EFS RCU to obtain program parameters from the configuration file located in your HP EFS RCU directory.

Syntax **/configfile <config filename>**

Parameters

<config filename>	Specifies the configuration file to use.
--------------------------------	--

NOTE: Command-line parameters are ignored when the **/configfile** option is enabled.

/port

Description Specifies the TCP port that the server is listening on.

Syntax **/port <portnumber>**

Parameters

<portnumber>	Specifies the port number.
---------------------------	----------------------------

/readtimeout

Description TCP read timeout value in seconds. The default value is **10800** seconds.

Syntax **/readtimeout**

Parameters None.

/recvbuf

Description Specifies the receive buffer size in bytes. The default value is **65536** bytes.

Syntax **/recvbuf <num>**

Parameters

<num>	Specifies the receive buffer size. The default value is 65536 bytes.
--------------------	---

/sendbuf

Description Specifies the TCP-send buffer size in bytes. The default value is **65536** bytes.

Syntax **/sendbuf <size>**

Parameters

<size>	Specifies the buffer size. The default value is 65536 bytes.
---------------------	---

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